

NRG Energy, Inc. P.O. Box 1001 1866 River Road Middletown, CT 06457

August 14, 2012

Mr. Gene Shteynberg CT Department of Energy and Environmental Protection 79 Elm Street Hartford, CT 06106

Subject: Semi-Annual Site Status Update

Middletown Station, 1866 River Road, CT

Dear Mr. Shteynberg:

Middletown Power LLC respectfully submits the enclosed Semi Annual Site Status Update prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the Middletown Station. This status update covers environmental activities performed from February 2012 through July 2012 at the subject site and includes the schedule.

Please contact Keith Shortsleeve, Environmental Compliance Specialist at Middletown Power LLC with any questions or for additional information at (860) 638-3102 or via email at keith.shortsleeve@nrgenergy.com.

Sincerely,

Middletown Power LLC

Jeffrey Araujo Plant Manager

Cc:

K. Shortsleeve, Middletown Power LLC

B. Spooner, NRG (electronic)
Juan Perez, USEPA (electronic)
A. Walker, LEP, Shaw (electronic)

File



August 14, 2012 Project #: 1009634015.24

Mr. Gene Shteynberg CT Department of Energy & Environmental Protection 79 Elm Street Hartford, CT 06106

Subject: Semi-Annual Site Status Update

Middletown Generating Station

Middletown, CT

Dear Mr. Shteynberg:

On behalf of Middletown Power LLC, Shaw Environmental & Infrastructure, Inc. (Shaw) has prepared this letter to provide a semi-annual site status update for the subject site. In addition, Shaw is providing the Connecticut Department of Energy & Environmental Protection (CTDEEP) with a schedule for continuing environmental activities at the site.

2012 ACTIVITIES

Environmental field activities completed at the site between February 2012 and July 2012 include monitoring well installation and repair, one groundwater monitoring event, and SB-1 Engineered Control (EC) inspections. The well installation, sampling event, and SB-1 activities are discussed in more detail below. Other environmental activities completed for the subject site during this reporting period include the following:

- Final draft specifications and plans for the remaining EC construction work were prepared for contractor bid. The bidding activities are anticipated to be initiated in the fall 2012.
- Significant progress continues to be made on an access agreement for SB-2 with the Connecticut Department of Transportation. Access is required to execute the EC in the southeast portion of SB-2. An agreement is anticipated to be reached in the fall 2012.
- The draft Environmental Land Use Restriction (ELUR) declaration and decision documents were prepared and submitted to CTDEEP on April 25, 2012 for general review and comment. No comments have been received from CTDEEP to date.
- The request for approval to use the Inaccessible Soil Exemption and the Environmentally Isolated Soil Exemption for soil beneath certain permanent structures at Areas of Concern (AOC) 1

- through AOC 8, AOC 11, and AOC 13 was prepared and submitted to CTDEEP on June 27, 2012 for approval. No correspondence has been received from CTDEEP to date.
- CTDEEP and the U.S. Environmental Protection Agency (USEPA) issued a conditional approval for the Ecological Risk Assessment (ERA) on April 13, 2012. The approval is contingent upon preparing a revised ERA using the previously agreed upon edits. The proposed edits were agreed to by all involved parties including USEPA, CTDEEP, NRG, and Shaw. The revised ERA was prepared and submitted to USEPA on June 20, 2012 for approval.

Monitoring Well Installation and Repair

Shaw was on site with Technical Drilling Services of Sterling, MA for the installation of two groundwater monitoring wells and two road box replacements on June 7, 2012.

The two wells were installed to approximately 37 feet below grade surface using a 4.25-inch hollow stem auger. The first five feet of each boring were cleared by hand as a utility avoidance measure and no soil samples were collected during the borings. The wells were constructed with Schedule 40, threaded, flush-jointed, 2-inch PVC with a 15-foot long 0.01-inch (10-slot) factory slotted well screen. A clean silica sand filter pack, bentonite seal, and native material were placed around the wells. The wells were completed with a concrete pad and locking stick-up protective casing. The boring and well construction logs for the two new wells are attached (Attachment 1). The wells were developed by bailing, surging, and pumping upon completion of installation. One new well, AOC1-MW1R, is a replacement for the previously installed well AOC1-MW1 which had been inaccessible due to SB-1 EC construction activities. Well AOC1-MW1R is located just off the construction access road to the north of the AOC1-MW1 well location. The other new well, AOC1-MW2, is located approximately 400 feet to the east of well AOC1-MW1R, also just off the construction access road of the SB-1 EC. The approximate locations of the two new monitoring wells are shown on the 'eastern' site plan (Figure 2). The horizontal and vertical locations of these two new wells will be surveyed at a future date.

Damaged flush-mount road boxes were replaced on wells AOC2-SB1-MW1 and AOC5-MW1. Precise measurements of adjustments made to the PVC casing in order to fit the new road boxes were taken for use in future groundwater gauging data evaluations and are recorded in the Shaw groundwater elevation database.

Groundwater Monitoring

Shaw conducted a site-wide groundwater sampling event on July 9 and 10, 2012 to monitor groundwater quality. Groundwater monitoring and sampling was completed at eleven monitoring wells, including the two new wells. Monitoring well locations are shown on the site plans (Figures 1 and 2). A list of the monitoring wells sampled and the analyses conducted is provided in the table below. Laboratory analysis was completed by Accutest Laboratories in Marlboro, Massachusetts. The groundwater sampling event was generally consistent with the EC Part 2 dated November 2010 and the Site-Wide Remedial Action Plan (RAP) dated October 2011 although samples were not collected for analysis of volatile organic compounds.

	Laboratory Analysis July 8 and 9, 2012 Groundwater Monitoring Event				
Location	PAH	Metals	ETPH		
TW-10		X	X		
TW-14		X	X		
TW-17D		X			
TW-18		X			
TW-21D		X			
AOC1-MW1R		X			
AOC1-MW2		X			
AOC2-SB1-MW1		X			
AOC8-SB1-MW1	X	X	X		
AOC9-SB1-MW1		X			
AOC9-SB2-MW2	X	X	X		

Notes:

- 1. Polycyclic aromatic hydrocarbons (PAH) including 2-methlynapthalene by EPA Method 8270 SIM.
- 2. Metals including arsenic, lead, selenium, vanadium, and zinc by EPA Method 6010C.
- 3. Extractable petroleum hydrocarbons (ETPH) by Connecticut Department of Public Health Method.

During the groundwater sampling event, depth to groundwater was measured at each of the monitoring wells using an electronic interface probe (IP) capable of detecting light non-aqueous phase liquid (LNAPL). LNAPL was not detected in monitoring wells gauged during this event. Results of water level monitoring from July 2012 are summarized in **Table 1**.

During the July 2012 groundwater monitoring event, Shaw collected groundwater samples from the monitoring wells listed in the above table using a modified low flow sampling technique. No samples were field filtered. Each well was pumped at a rate that produced little or no drawdown while parameters including temperature, pH, dissolved oxygen, turbidity, and conductivity were monitored. Groundwater samples were then collected after the parameters stabilized to ensure that the groundwater sample was representative of local aquifer conditions. The final water quality parameters measured at each well are summarized in **Table 2**. Laboratory analysis of each sample is noted in the table above. Analytical results have not yet been received from the laboratory and will be included in the next semi-annual status report after data validation and evaluation activities are completed.

SB-1 EC Inspections

As stated in Section 6.0 of the CTDEEP-approved EC, routine inspections of the EC should commence within 1 month of project completion and quarterly for the first year. Since the SB-1 EC was completed in September 2011, the facility and Shaw have conducted the required periodic inspections of the SB-1 EC in October 2011, January 2012, and April 2012. During this reporting period, NRG and Shaw conducted the EC inspection on April 13, 2012 and the EC was observed to be in reasonable condition with no significant signs of a washout, erosion, or other failure. A modified version of Table 1 of the EC Part 2 (Shaw, 2010), the Engineered Control Inspection Checklist, was completed to document this inspection (Attachment 2). The remaining work in other areas of the site outlined in the RAP and EC submittals will

Mr. Gene Shteynberg
CT Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106
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be performed following procurement of the associated construction services. As-built plans for the SB-1 EC will be included in an EC completion report to detail the construction activities once site wide EC construction is complete.

SITE SCHEDULE

Outlined below is a site schedule that Middletown Power LLC and its parent company, NRG Energy Inc., expect to follow in the next two years.

Activity	Anticipated Date
Initiate RAP (i.e., start of final remediation)	Q4 2012
RAP Complete (i.e., construction complete)	Q2 2013
RAP Completion Report	Q4 2013
Continued Groundwater Monitoring	Q1 2013
Post Remediation Monitoring	2014

NRG Energy, Inc. will continue to provide updates on the status of response actions at the subject site on a semi-annual basis as requested by CTDEEP. Plans, submittals, and reports will be copied to the USEPA.

If you have any questions regarding this letter or any other matter, please do not hesitate to call me at 617.589.6143.

Sincerely,

Shaw Environmental & Infrastructure, Inc.

Andrew D. Walker, LEP, LSP

Project Manager

Enclosures:

Table 1 – Groundwater Gauging Data

Table 2 – July 2012 Groundwater Monitoring Field Parameters

Figure 1 – Site Plan – Western

Figure 2 – Site Plan - Eastern

Attachment 1 - Drilling Logs

Attachment 2 - EC Inspection Form

 Keith Shortsleeve, Middletown Power LLC Robert Spooner, NRG (Electronic copy)
 Juan Perez, USEPA (Electronic copy)

Mr. Gene Shteynberg

CT Papertment of Engineering Protection, 70 Flm Street Hortford, CT 06106

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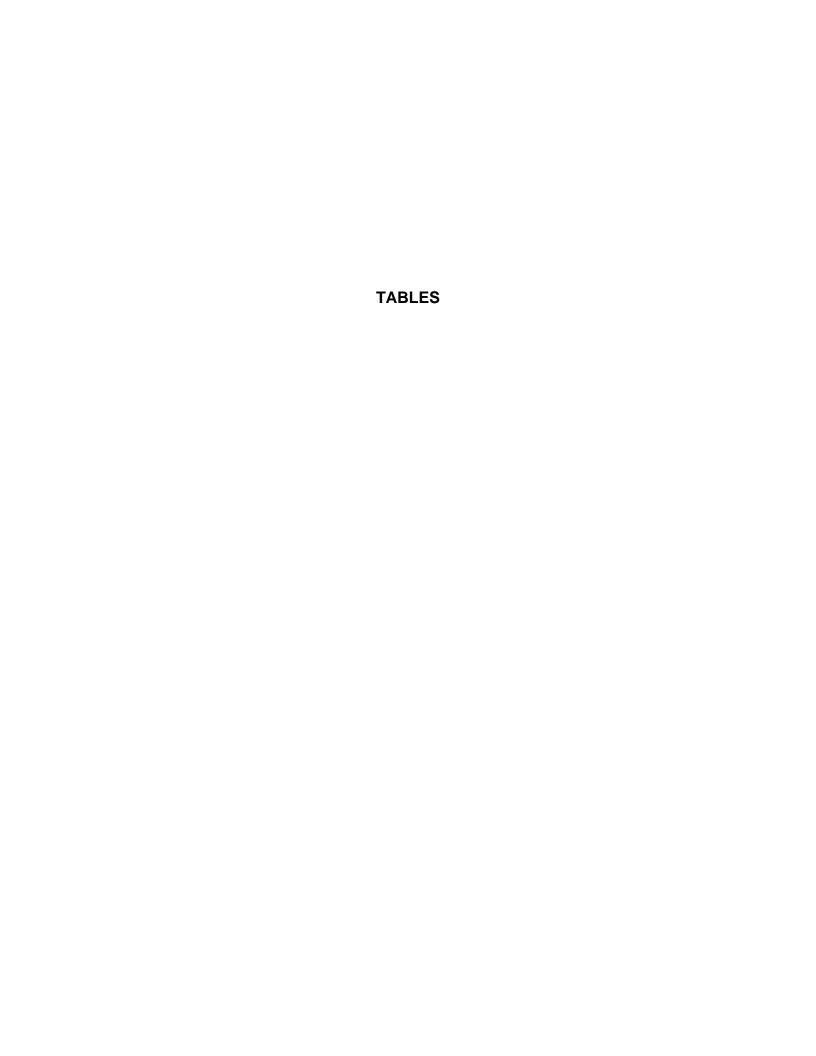


TABLE 1 GROUNDWATER GAUGING DATA (07/09/12 - 07/10/12)

Middletown Power LLC 1866 River Road Middletown, Connecticut

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Groundwater Elevation (Feet)	Notes
AOC01-MW1R	07/09/12	NA	32.41			NA	DTB = 39.43'
AOC01-MW2	07/09/12	NA	32.31			NA	DTB = 39.97'
AOC02-SB1-MW1	07/10/12	27.60	25.52			2.08	DTB = 35.80'
AOC08-SB1-MW1	07/10/12	25.38	19.50			5.88	DTB = 31.99'
AOC09-SB1-MW1	07/10/12	27.39	25.01			2.38	DTB = 34.53'
AOC09-SB2-MW2	07/10/12	24.92	22.33			2.59	DTB = 34.55'
TW-10	07/09/12	32.60	28.58			4.02	DTB = 47.59'
TW-14	07/09/12	28.33	25.71			2.62	DTB = 46.48'
TW-17D	07/09/12	34.48	31.72			2.76	DTB = 41.85'
TW-18	07/09/12	36.92	34.90			2.02	DTB = 41.21'
TW-21D	07/09/12	34.42	32.58			1.84	DTB = 40.98'

Notes: -- = Not Detected

<0.01 = Trace amount LNAPL detected

NA = Not Available

NM = Not Measured

DTB = Depth to Bottom

Page 1

TABLE 2 July 2012 Groundwater Field Water Quality

Middletown Power LLC Middletown, Connecticut

				Specific	Dissolved		
		Temperature	рН	Conductivity	Oxygen	ORP	Turbidity
SITE_ID	DATE	(C)		(mS/cm)	(mg/L)	(mV)	(NTU)
AOC01-MW1R	7/9/2012	19.01	6.23	0.769	1.35	330.1	0.5
AOC01-MW2	7/9/2012	16.94	6.05	1.081	1.03	-32.7	0.6
AOC02-SB1-MW1	7/10/2012	15.23	6.05	0.243	4.18	176.8	0.6
AOC08-SB1-MW1	7/10/2012	18.60	6.15	0.241	1.20	80.4	0.5
AOC09-SB1-MW1	7/10/2012	18.65	6.18	0.715	0.74	-44.4	0.4
AOC09-SB2-MW2	7/10/2012	17.21	6.07	0.885	0.92	15.5	0.6
TW-10	7/9/2012	16.09	6.08	0.236	1.22	84.1	0.7
TW-14	7/9/2012	14.08	5.81	0.176	0.76	51.0	0.8
TW-17D	7/9/2012	12.83	6.81	0.968	2.25	125.1	0.6
TW-18	7/9/2012	11.56	6.38	0.612	1.05	-5.6	0.6
TW-21D	7/9/2012	13.88	6.90	0.964	1.66	100.4	0.5

^{*}Field parameters measured with a YSI.

C - degrees Celsius

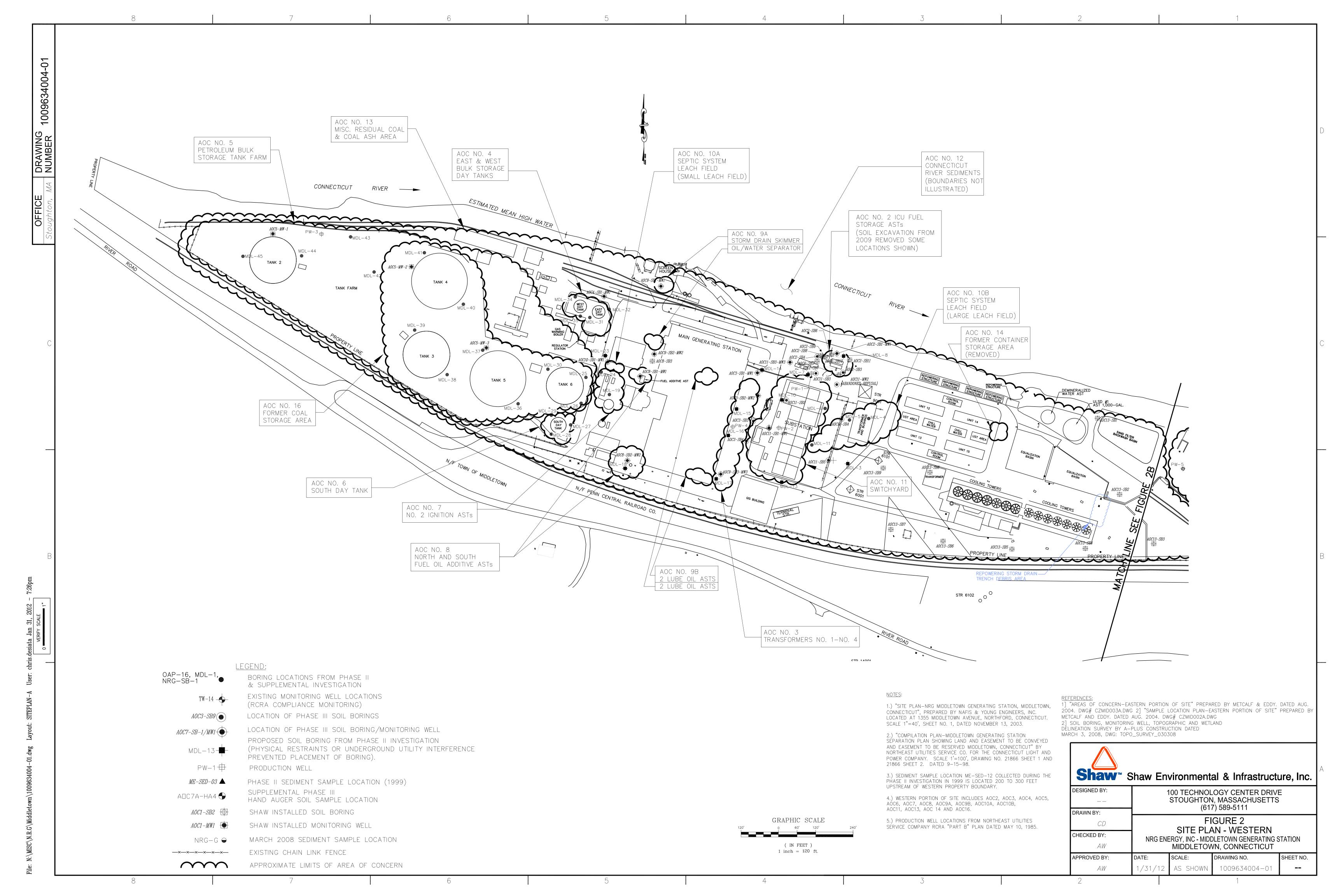
mS/cm - milli-Siemens per centimeter

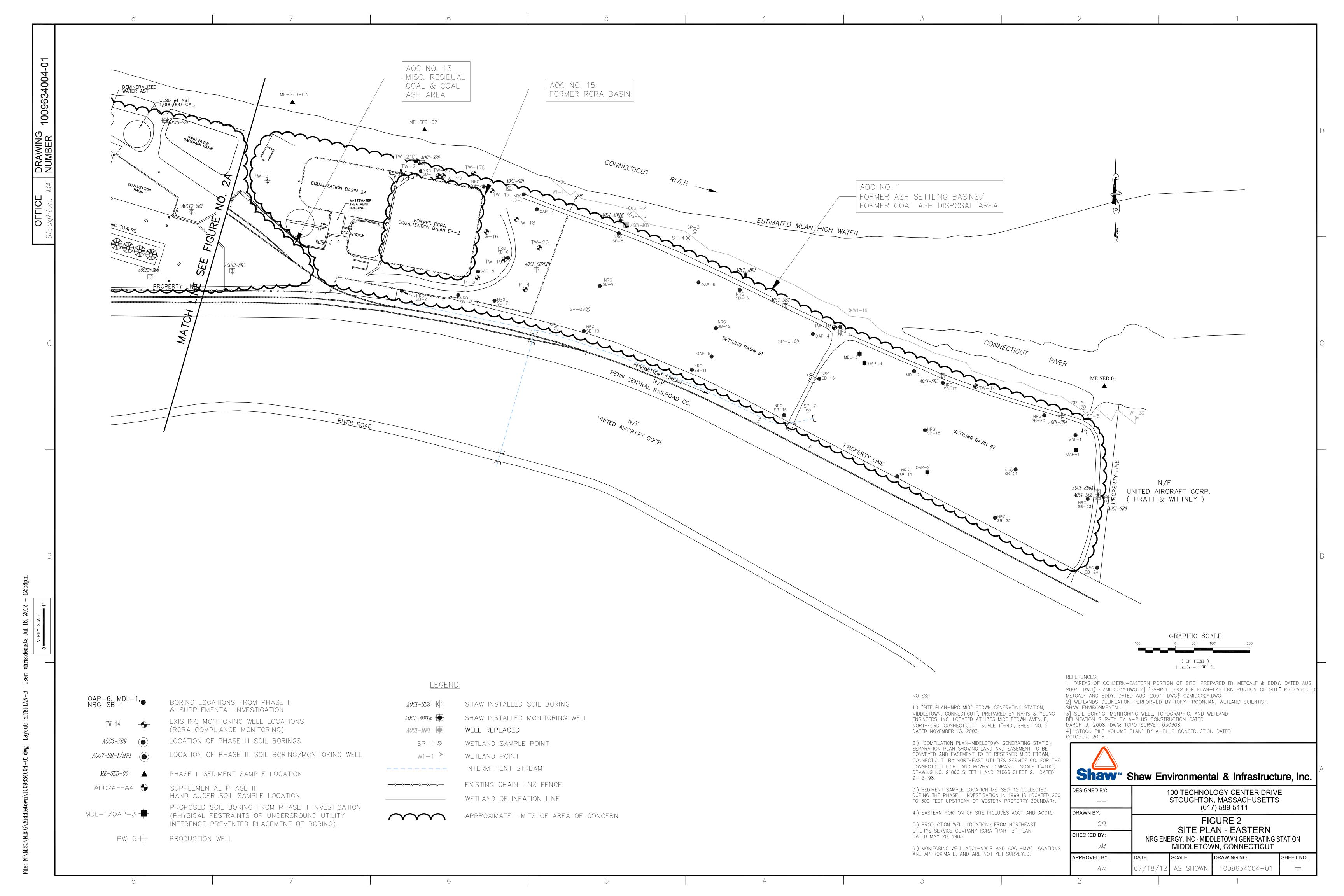
mg/L - milligrams per Liter

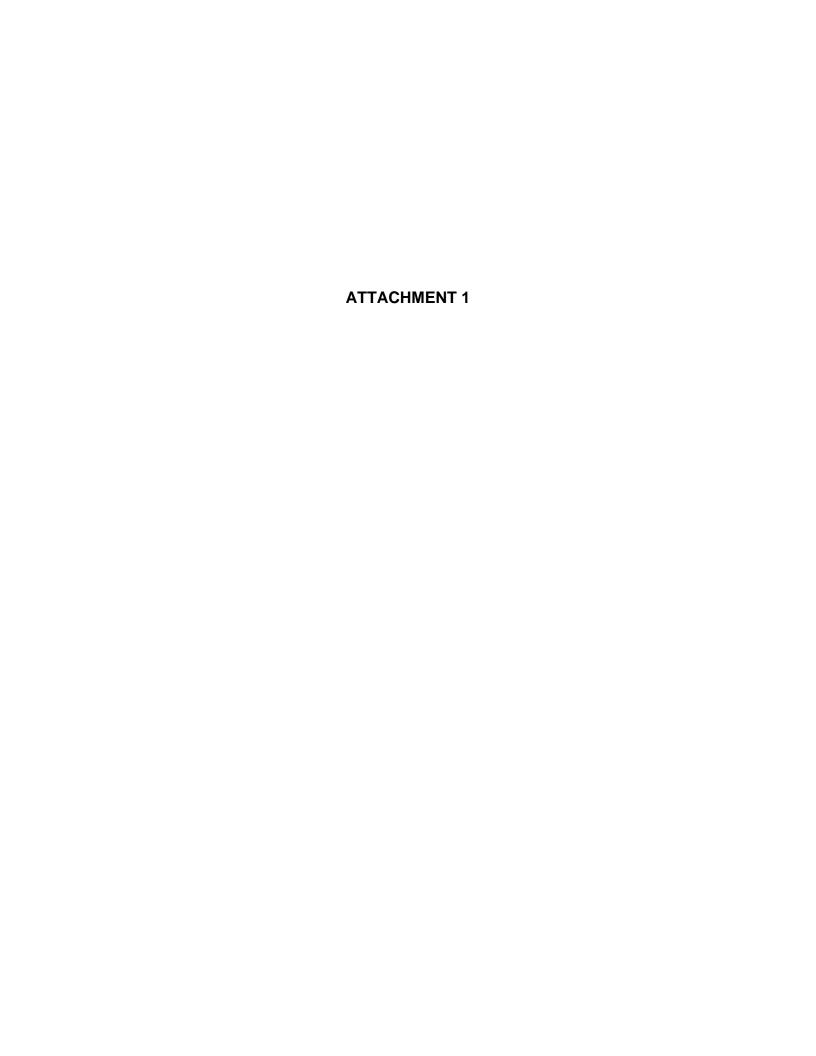
mV - millivolts

NTU - Nephelometric turbidity units











Drilling Log

Monitoring Well

AOC1-MW-1R
Page: 1 of 1

Projec	ject NRG Middletown Owner Middletown Power LLC COMMENTS							
Locati	ocation1866 River Road, Middletown, Connecticut Proj. No1009634015 ND = None detected							ND = None detected
Surfac	Surface Elev. NA Total Hole Depth 37.0 ft.							No split spoons collected.
Top of	Top of Casing NA Water Level Initial 28.0 ft.				nitial $\stackrel{ extstyle op}{=}$	28.0	ft. Static NA Diameter 4.25 in.	Visual: No ash noted. PID and
							Type/Size PVC/Slot 0.010 in.	description collected off cuttings.
							Type PVC	Approximately 2.6 ft. of PVC TOC stickup above grade.
							g/Core D120/Hollow Stem Auger	
				Meth				
							Date _6/7/12 Permit # _NA	
			eele	0 ,			Butc Firme #	
	100 0	<i>y</i>			1 2100110	U 110.		
		uo		o ant el⊡	U	Class.	Description	
Depth	<u>.</u>	Well Completion	PID (ppm)	Sample ID % Recovery Blow Count Recovery	Graphic Log	Ö		
		Com		San % Re Blow	_ 5 1	nscs	(Color, Texture, Structu Geologic Descriptions are Based or	
				0			Geologic Descriptions are based of	Title 0303.
			,					
⊢ 0	-	3933 332	 				0' - 5' Hand Cleared with Post Hole Digge	r
			¥				Light brown, loose, medium SAND	I
-	-		ND			SP		
⊢ 5	-		3					
			3					
F	-		3					
<u> </u>) —		ND		*********		5	
'			\$				Brown, loose, fine SAND	
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	, ∐		. IND			Sivi	Brown, moist, SAND and SILT	
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A. O.	.							
) 25	7							
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25 – 30	ا ر		ND				Wet, medium dense, SILT	
2 2								
3/12/0	1					ML		
 						IVIL		
[®]								
RCI.								
MME	1						End of exploration at 37 feet below surfac	e grade.
8								
SHAW_COMMERCIAL_Rev: 6/12/02 2012_LOGS.GPJ_IT_CORP.GDT_8/2/12	ן ו ו							
		_			_			



Drilling Log

Monitoring Well **AOC1-MW-2**

Shaw E	& I, INC.					J	Page: 1 of 1
	NRG Middle					wner Middletown Power LLC	COMMENTS
			Middletown, Co			Proj. NoProj. No	ND = None detected
Surface Elev. NA Total Top of Casing NA Water Screen: Dia 2 in. Lengtl Casing: Dia 2 in. Lengtl Fill Material Cement, Native, Benton Drill Co. TDS			Water Level Length	Initial ft. 3 ft. nd ethod Ho	Ri		No split spoons collected. Visual: No ash noted. PID and description collected off cuttings. Approximately 3.3 ft. of PVC TOC stickup above grade.
			• .			Date <u>6/7/12</u> Permit # <u>NA</u>	
Depth (ft.)	Well	OIA (mdd)	Sample ID % Recovery Blow Count	Graphic Log	USCS Class.	Description (Color, Texture, Structu Geologic Descriptions are Based or	
- 0 -							
						0' - 5' Hand Cleared with Post Hole Digge Light brown, medium SAND, trace gravel	
- 5 -						Light brown and yellowish brown, medium	SAND
- 10 - 		ND			SP	Dark brown, medium SAND	
- 15 - 							
- 20				7.57		BOULDER and COBBLES	
BOS.GP. 25 −				28			
Rev: 6/12/02 2012_LOGS.GPJ IT_CORP.GDT		ND			SM	Wet, SILTY SAND	
SHAW_COMMERCIAL_Rev. 40							
MHW - 40 -						End of exploration at 38 feet below surface	e grade.

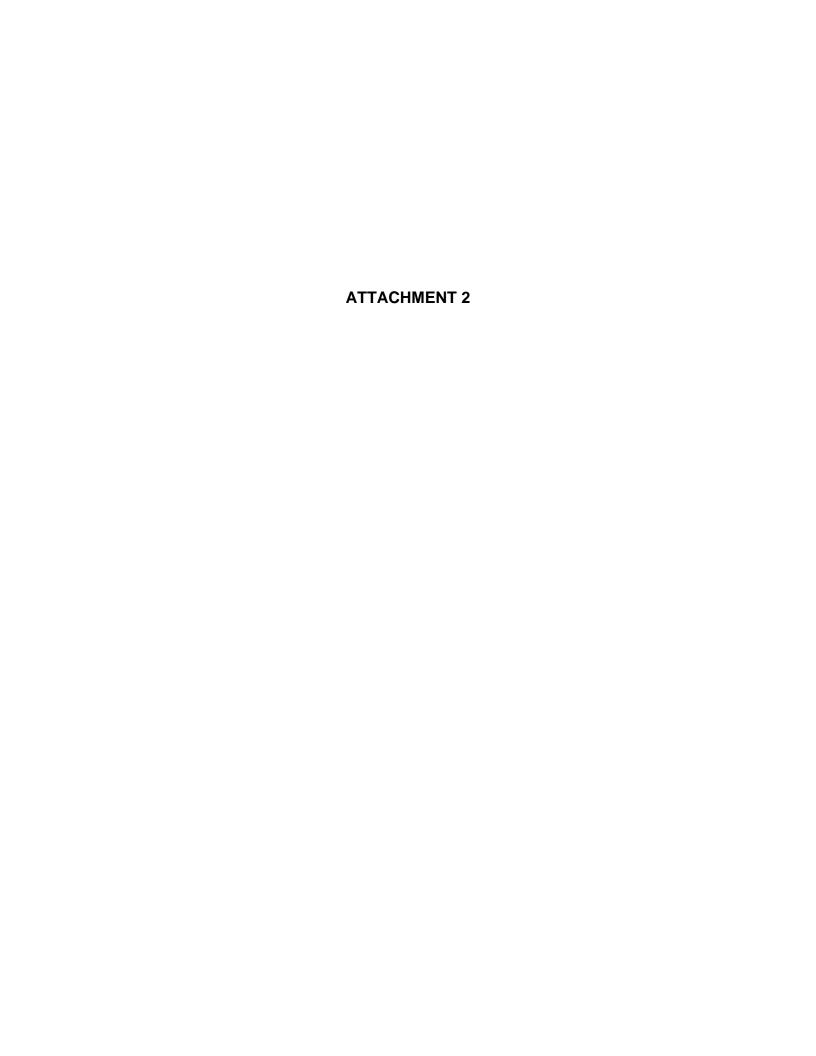


Table 1 Engineered Control Inspection Checklist Middletown Generating Station Middletown, CT

Completed by:	<u>Andy</u>	Walker and Paul Farrington
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Company: Shaw Environmental, Inc.

Date: April 13, 2012

Signature: A. W.

Problem Code

ACE 1 or 2 = Aggregate Cover Erosion, Moderate or Severe

ACSW 1 or 2 = Aggregate Cover Subsurface Washout, Moderate or Severe

SCE 1 or 2 = Soil Cover Erosion, Moderate or Severe

SCSW 1 or 2 = Soil Cover Subsurface Washout, Moderate or Severe

GD 1 or 2 = Vegetation Dead, Moderate or Severe

GE 1 or 2 = Vegetation Erosion, Moderate or Severe

GP = Vegetation Water Ponding Observed

GSF = Vegetation Slope Failure

GSW = Vegetation Subsurface Washout

PDSO = Perimeter Drainage Swale Obstructed

DCO = Drainage Culvert Obstructed

AP C1 = Asphalt Pavement Cracks > 1/2 inch

AP C2 = Asphalt "Potholes"

SF = Slope Failure

O = Other

NA = Not Applicable

Remedial Areas (2)	Location (2) (3)	Problem Code	Repair Requirements and Notes (Provide Description) (4)
AOC 1			
Low Permeability Engineered Control		No issues observed at SB-1.	
Aggregate Engineered Control		NA	
Soil Engineered Control		NA	
Prior Repair Area (5)		NA	
AOC 8		•	
Asphalt Engineered Control		NA	
Prior Repair Area (5)		NA	
AOC 13 (Eastern half)			
Aggregate Engineered Control		NA	
Soil Engineered Control		NA	
Asphalt Engineered Control		NA	
Prior Repair Area (5)		NA	

Notes

- (2) Use Sheets 1, 2, 3 and 4 of the Engineered Control Drawings for the Inspection Plan.
- (3) At least one photograph should accompany each location number.
- (4) Supplementary computations and design text maybe required for significant repairs
- (5) Document condition of each area identified and repaired during previous inspection.